

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



CALIFORNIA RURAL LAND USE  
AND  
MANAGEMENT

A History of the Use and Occupancy  
of Rural Lands in California

By

Wm. S. Brown

and

S. B. Show

1944

United States Department of Agriculture  
Forest Service  
California Region



Chapter X    Awakening to Conservation Needs, 1891-1905

UNITED STATES  
DEPARTMENT OF AGRICULTURE  
LIBRARY



Reserve

BOOK NUMBER

A282.010

F76

V.3

## CHAPTER X    AWAKENING TO CONSERVATION NEEDS, 1891-1905

The story of land use in California during the period of 1891 to 1905 is of such a complex pattern that it is almost beyond any historian to place the progress of development of the state in any orderly sequence. Four and five decades after the Gold Rush which directed the thoughts of the world to the new, undeveloped empire on the Pacific Coast, the word "California" was still a magic word on the lips of millions of people.

The name conjured up thoughts of a winterless climate, of unprecedented crops; of miraculous oil fields; of gigantic industrial combines; of strange mining practices; of land barons and cattle kings, and of land use on a scale which dazzled the mind of the farmer working his quarter section east of the Rockies. It is safe to say that at least one person in five nationwide, cherished the ambition to some day see this land of gold and sunshine. In later decades this ambition would be realized by many when new methods of rapid transportation over concrete highways became universal--a method of locomotion to be powered to a great extent from the great petroleum deposits with which this new part of America was blessed.

In common with the rest of the nation, the "Gay Nineties" and the dawning years of the Twentieth Century were an epoch-making period in the history of rural California. Still chafing under its raw newness, California, while enjoying the results of this great inventive era, suffered with the rest of the nation all the economic and social ills of the time. The gigantic trusts and monopolies born during this period spread their tentacles over California where the biggest asset was the yet undeveloped and under-developed lands. Land-grabbing continued apace and immense land holdings were still the order of the day. The period, however, was to witness the awakening of the public consciousness to the fact that the great natural wealth of the Pacific commonwealth was being rapidly dissipated and that some action was necessary to halt the progress of exploitation and misuse.

While Thomas A. Edison on the East Coast was startling the world with the miraculous inventions which were to do so much to raise the American standard of living, Luther Burbank was showing equally startling results, with a combination of California land and climate. He taught the world how to produce more and better crops and became one of the great benefactors of the American farmer.

By 1892, a near-sighted man on the Atlantic Coast was well launched on the political career which would place Theodore





Roosevelt among the greatest Americans of all time and land him in the White House as one of the staunchest friends of California lands. At the same time, at Biltmore, North Carolina, Gifford Pinchot, the tall, slender youngster who had already studied the forests of the world, was laying the foundation for a future which would later rank him with Roosevelt as an exponent of good land use, and as the growing pains of a mighty nation forced the increasing population ever westward, more and more people came to the lands of California.

### Increasing Land Use

In the light of cold figures, the ratio of population increase was not nearly so great as that which was to follow in later decades. The total population of California in 1890 was 1,213,398 people, of which only 250,189, or slightly more than one-fifth, were rural residents. By 1900 the official figures give 1,485,053 as California's total population, of which number 309,042 were listed as rural residents. The ratio of urban and rural population remained approximately the same for the ten years. This might seem strange in view of the fact that grain farming on an extensive scale was slowly giving way to more intensive agriculture. However, more modern machinery on the big farms served to offset the greater relative volume of labor needed on the smaller, more intensively-used farm units.

The greatest growth of rural population during preceding years occurred in the irrigated counties. For the period 1880 to 1890 the population of San Diego County as a whole increased 295 percent, that of Orange County 244 percent and of Los Angeles County (assisted by the land boom of the late eighties) 234 percent. Other counties showing substantial population growth were: Fresno 228 percent; San Bernardino 227 percent, and Tulare 120 percent. Kern County, which was almost unknown in 1870 and Bakersfield at that time merely a wide spot on a wagon road, by 1890 had a population of over ten thousand people. Bakersfield had blossomed into a rural metropolis.

The size of the average farm unit in California dropped slightly in the final decade of the 20th Century, being 405 acres in 1890 and 397 in 1900. The total value of farm lands increased but little--from \$697,117,000 in 1890 to \$707,913,000 in 1900. The average value per farm slid down during the decade from \$13,180 in 1890 to \$9,759 in 1900. The average value per acre dropped from \$32.53 to \$24.56. These farm land values in California were never to be reached again and seemed to illustrate the punishment imposed on the land by the one-crop grain farming. Illustrative also of changing trends in agricultural land use are the figures reported by the





United States Bureau of the Census. These show that while land dropped in value, the total investment in farm machinery and implements jumped from \$14,690,000 to \$21,312,000 in the same ten-year period.

The 1900 U. S. Census figures give the cash farm value of all California crops produced in 1899 as \$131,690,000 - \$13,488,000 for livestock on farms. The average production per farm in the State was \$536 as against an average for the entire United States of \$826. California's average production per acre from improved farm lands was given as \$11.01 while the average acre of improved farm lands in the entire nation produced a crop value of \$11.42.

Of the total of 28,828,951 acres included in California farms by the 1900 Census, the percentage of farm land listed as "Improved" is stated as 41.5. In 1850, the proportion of improved lands on California farms was listed as less than one percent; in 1860, twenty-eight percent; in 1870, 54.4 percent; in 1880, 64.3 percent; and in 1890, fifty-seven percent. The record low of 41.5 percent of improved farm land gives concrete evidence of the existence of much idle land. As the 19th Century came to a close, California with its yearlong growing season, was not showing up too well from an agricultural standpoint.

### Agricultural Production

Wheat was still the king of California crops. Ranking sixth in volume of production among the States of the Union in 1899, the Golden State had 2,683,405 acres of this crop grown on 12,603 farms. The yield that year was 36,534,407 bushels, valued at \$20,179,044. The average yield per acre was 13.6 bushels, almost a bushel more than the average for the entire country.

California's barley production led the nation in 1899, both in volume and in yield per acre. The census statistics show for that year 25,149,335 bushels from an area of 1,029,647 acres, located on 10,267 farms. The value of that year's barley crop was \$10,645,723 and the average yield per acre 26.8 bushels as against a national average production of 24.4 bushels per acre.

Corn, oats and rye were grown on 270,589 acres of California lands, producing 973,900 bushels of these cereals with a collective farm value of \$2,652,877. Even with the advancing land values in that section and increased production of citrus fruits, Los Angeles County alone in 1899 had approximately 42,000 acres in barley and wheat. Monterey County had 154,767 acres, and San Joaquin County 360,000 acres in these two leading cereal crops that year.



California was also yet very much of a livestock state and the 1900 census shows it as holding ninth place among the States of the Union in the production of hay and forage crops. In 1899 the State had 2,239,600 acres devoted to the production of hay and other forage crops on 49,902 farms. This was approximately one-third of the State's entire acreage of crop land. The forage crop harvested that year was 3,035,932 tons, with a market value on the farm of \$19,436,400 and an average yield of only 1.4 tons per acre. About one-third of the State's improved farm lands were growing hay crops in 1900.

Inversely, as compared to the rest of the United States, California feeds her livestock during the summer months instead of during the winter. That a large volume of forage was needed to supplement the natural green mountain grazing lands or the comparatively small area yet in irrigated pasture, is evidenced by the 1900 report of the State Department of Agriculture on the number of livestock in the State. These figures list 493,000 horses of all ages, 1,360,000 cattle, including calves; 2,500,000 stock sheep and lambs, and 630,000 hogs. A total of 285,000 head of the cattle were listed as dairy stock.

The numbers of sheep had shown an enormous drop from the preceding decade, partly because of extensive fencing and use of barbed wire, and also because of the fact that sheep had practically "eaten themselves out of house and home". California wild lands were still hard put to provide natural range for this class of stock. Counties with large areas of wild lands had passed ordinances imposing taxes upon and restricting movements of sheep and in some areas cattlemen were protecting their ranges from sheep encroachment at the point of a six-gun.

By far the greatest number and acreage of farms were devoted to livestock production. In 1900 out of a total of 72,542 farms of all sizes, 15,418 were occupied with this form of agriculture. According to the Federal census takers, these livestock farms embraced 12,523,729 acres and represented a value of \$157,285,289. Over half of the livestock ventures were dairy operations. The 8,686 dairy farms were credited with 153,307 cows, producing during the year 153,684,740 gallons of milk.

Between 1890 and 1900 horses decreased in number from 423,000 to 398,000. This was at a time when the automobile had entered the rural landscape only as a mechanical freak. Mules, however, increased during the same decade from 53,627 to 79,738.

Sugar beet farming by 1900 had reached an acreage of 41,242, with a harvest of 356,535 tons. Since all the sugar beets were





raised on 354 farms, there was evidently a good deal of specialized farming in connection with their production. Different varieties of beans were raised that same year on 45,860 acres and their production reached a figure of 658,515 bushels.

By 1900 small scale farming in California had assumed sufficient proportions to be awarded a rather important place in the figures of Uncle Sam's enumerators. Some of the crops heretofore considered minor are listed somewhat in detail. That year commercial vegetable farming is shown in the statistics as embracing 5,018 acres with a crop valued at \$3,442,288. Vegetable production brought in an average compensation to the farmer engaged in it of \$86.42 per acre. This compared very favorably, indeed, with the national average of \$57.35 per acre.

The volume of vegetable and small fruits produced commercially in California increased 142.3 percent between 1889 and 1899. Many of the larger farms on which rural families lived, evidently had profited from the advice given to the one-crop farmers about three decades previously by the State Agricultural Society. Thirty percent of all farms are listed in 1900 as having home gardens, often forming a restful green spot among the wide expanses of yellow stubble or brown fallow lands. The U. S. Census Bureau gives the cash value of the products of these farm gardens as \$327,955.

The total value of poultry in California in 1900 is given in the census as \$1,877,489. This money valuation was based on 3,947,200 chickens, 158,356 turkeys, 28,420 geese and 62,293 ducks. Honey production was gaining a spot in the agricultural production picture, as in that year apiaries are listed as having a value of \$363,885.

With the fast growing demand for tree seedlings to plant new land, the nursery business in 1900 was beginning to assume proportions approaching a major land use. The census figures that year listed 141 nursery farms propagating flowers, trees, shrubs and fruits. The combined acreage of these farms was given as 6,689, with a value of \$1,178,188. This was probably the most intensive form of land use practiced in the State at that time. At the time the 1900 census was taken cotton production in California was of such relatively minor importance that it was ignored in the census figures. Other products of California lands which later assumed voluminous proportions were at this time merely regarded as "novelty" crops.

The English walnut with an acreage of 14,912, was no longer regarded as a "novelty" crop by 1892. Its history is somewhat synonymous with that of many other California orchard crops. First it had a modest or perhaps accidental start; next a decided affinity for the climate was demonstrated; finally





came an improvement in quantity of unit production, size, appearance and flavor and then specialized production on a large scale.

The name "English" walnut is a misnomer, since the tree was originally native to the countries of Europe bordering on the Black Sea. England was a stepping stone to California which now produces around ninety percent of the world's output of walnuts. Altho grown commercially in England since the sixteenth century, it is believed to have been originally brought there by Caesar's Roman legions. It was first introduced to California by the Mission padres about 1770 in 1843. A few trees were planted for ornamental shade in San Diego, and later it was introduced for the same purpose in some northern Sections of the State.

Commercially the tree which should really be known as the "California" walnut was born in Santa Barbara County. J. J. Sexton, pioneer orchardist and horticulturist of the Goleta Valley, commenced propagation of this tree in 1867. Importing seeds from various parts of the world and crossing the different species, Sexton produced what became later known as the English soft-shelled walnut. Later walnuts were raised in many widely scattered sections of the State, but mainly in the South Coast Region. This famous orchard tree is a different tree entirely from its relative, the Black Walnut, which produces inferior fruit but highly-prized timber, and is now also indigenous to different areas of the State.

Compared with later production, both the walnut and almond industries were in their infancy in 1900. Statistics of the time show that there were 650,000 almond trees in the State in 1890 and 1,600,000 in 1900. In the late eighties and nineties, there was a heavy planting of olive trees which are now such a familiar sight on so much of the California landscape. Usually they were planted as borders to orchards or for ornamental purposes. Figures show that while there were approximately 13,000 bearing olive trees in the State in 1885, their number had grown to 275,000 ten years later and by 1900 had reached a total of 1,530,000 trees.

It is perhaps not so strange that the hardy apple, so closely associated with the harsh climate of the New England States or with the Ohio Valley, should until the last decades of the 19th Century, have been the leader in California fruit production. This was probably the best known of all fruits to the covered wagon pioneers, and the presence of apple trees on their homesteads undoubtedly constituted a sentimental link with their old homes across the continent. However, by 1892 the 19,500 acres devoted to apple raising was surpassed by 60,000 acres of orange groves. Peaches occupied 55,000 acres,



prunes nearly 50,000 acres and apricots 30,000 acres. Pear orchards covered almost 24,000 acres by that time.

The report of the California State Horticultural Society in 1892 gives 298,379 acres growing fruit and nut trees; 4,540 acres planted to small fruits, and 98,624 acres producing different varieties of grapes.

According to this same State authority, it was still possible in 1892 for a farmer with a comparatively small capital to get a start in fruit-raising in California since they give the following optimistic figures for a 10-acre raisin vineyard:

#### COST

Initial investment which includes stock, land at \$100 per acre, planting and cultivation.....	\$1,210.
Second year costs, pruning, cultivation, etc. ....	105.
Third " " " " " .....	125.
Fourth " " " " " .....	135.
Fifth " " " " " .....	155.
Raisins produced, cost of picking, handling, packing, etc. @ .30¢ per box .....	<u>2,370.</u>
Total.....	\$4,100.

#### INCOME BY YEARS

Second Year, 100 boxes @ \$1.50 .....	\$ 150.
Third Year, 800 boxes @ \$1.50 .....	1,200.
Fourth Year, 2,000 boxes @ \$1.50 .....	3,000.
Fifth Year, 2,400 boxes @ \$1.50 .....	3,600.
Sixth Year, 2,600 boxes @ \$1.50 .....	<u>3,900.</u>
Total six-year income ...	\$11,850.
Costs - 6 years .....	<u>4,100.</u>
Net profits .....	\$ 7,750.

The report adds: "And value of land increases the profits". Raisin farming was fast becoming a major land use in California. In 1900 the annual production had reached 47,000 tons, with Fresno County, then as now, the main raisin growing center.

Mendocino County in the North Coast Region, in addition to lumber production from its immense redwood forests, was cited by the State authorities as having become a prolific fruit producing center. With an average annual rainfall of almost forty inches and a much shorter dry season than most of the rest of the State, this type of crop could be grown in the valleys of that section with little or no irrigation. This rather rugged area of the State added materially to the total fruit production.





The total fruit pack for all of California in 1899 is stated as slightly under three million cases and the 1900 output of dried fruit, raisins and nuts reached a figure of almost 138,000 tons. In a climate similar to that of the great Arabian Desert the production of dates in the Coachella Valley in the extreme southern section of the State was just getting a start by 1905.

The citrus fruit industry in Southern California was growing by leaps and bounds, and in 1900 some five million pounds of citrus fruits were picked and processed for shipment to Eastern markets. State census figures for that same year show a total of 5,500,000 Washington navel orange trees growing in the State as a whole. Altho the main citrus belt then, as now, was Southern California, orange production was coming to the front in Tulare County and a considerable acreage of citrus fruits was being planted in the Northern Sacramento Valley.

#### Citrus Fruit Marketing

Citrus fruit growers in Southern California were having more than their fair share of trouble. Settlers from the Middle West who had invested their last dollar in orange groves and had waited six or seven years for it to reach profitable production, were forced to ship their fruit on consignment to Eastern markets. Ruinous brokers' commissions, high freight rates and demurrage charges, with the net profit to the grower often below the cost of production, brought ruin to many small farmers. Southern California land boosters had made good on their promise of huge crops. The much vaunted lands were doing their part, but financial profits intended for the land user himself were sidetracked into the pockets of the middleman.

Seeking relief, orange growers formed marketing associations in the orange growing districts of Riverside, San Bernardino, Orange and San Antonio, as well as in other centers. These, through the medium of more orderly marketing and handling from the land to the consumer, afforded some measure or relief. Competition and lack of coordination among the different local organizations failed, however, to change entirely the entries on farmers' books from loss to profit. From a merger of these different local cooperatives there resulted a marketing organization which was broadened in 1905 to include the entire State's citrus growing areas. This was named the California Fruit Growers Exchange. This has since become one of the greatest farmer cooperatives in the world.





## Mineral Production

In value of production, mineral use of California lands held second place to agricultural use during the 1890-1905 period of the State's history. The California State Bureau of Mines shows a total mineral output valued at \$31,585,000 for the year 1900.

Yellow gold was still the leader, the production that year being worth \$15,863,000. By 1905 this figure had reached almost \$19,000,000. Among the other precious and semi-precious metals, copper was second to gold with a valued production of \$4,748,241 but dropped to \$2,650,000 in 1905. Quicksilver, the production of which has fluctuated greatly through the years, accounted for \$1,405,000 of California's mineral harvest in 1900 but by 1905 had dropped to \$860,081. Silver produced in the State in 1900 was valued at \$724,000 but this figure had declined to \$650,000 by 1905. Tungsten, later to leap to big figures in the State's mineral production, appears in the State-wide statistics for the first time in 1905, with a valued output that year of \$18,000.

With the large volume of building activity in the fast-growing State, the field of structural materials produced on a State-wide basis had greatly widened, and California was tending towards the stage where building essentials necessary for practically all forms of construction would come from her own lands. These building materials, although having a low unit value, loomed large in the State's aggregate mineral value. They included cement, granite, lime, marble, hollow tile and a host of similar products, processed from the land itself. The State Bureau of Mines gives the production value of brick and hollow tile in 1900 as \$905,200 and in 1905 as \$2,273,000. The same authority shows miscellaneous stone valued at \$787,000 in 1899 and at \$1,716,000 in 1905.

Farmers and urban builders alike were turning to a more general use of cement in construction work and finding varied uses for the product. The output of cement in 1899 was given a value by the State mining authority of \$180,000 and this figure had increased to \$1,791,916 in 1905. Altho cement had been mined and used in a crude way in California for many years it was not until 1894 that the first modern cement mills were built.

Such products as asbestos, bentonite, gypsum, limestone, pyrites and potters' clay, processed into a multitude of items intended for industrial and everyday use, were also commencing to swell the State's mineral production figures. Mineral water alone is given as having a value of \$268,000 in 1900, and \$538,700 in 1905.



The forbidding desert lands were doing their part in adding to the mineral wealth of the State. Besides much of the other minerals mentioned, borates and other salines from these regions showed an average annual value of almost one and one-half million dollars during the years 1899 to 1905.

The picturesque 20-Mule Team days which brought the famous, unique area of Death Valley into the limelight were ended in the early nineties when railroad development in that region replaced wagon hauling of borax.

These 20-mule teams of the eighties were another innovation marking the diversity and strangeness of California lands and land use. Eighteen mules and two horses hauled a pair of wagons of ten-ton capacity, each equipped with huge seven-foot wheels and solid axles, so that any turn made by the wagons was a series of skids or side slips. The round trip between mine and railroad, a distance of 170 miles, was accomplished in 20 days. The teams hauled the water supply for the outfit between water stations in specially-constructed tank wagons. Horse power predominated in this method of marketing of borax products, since only two men ran the cavalcade - an expert mule skinner and a swamper who acted as brakeman, hostler and cook.

Coal in California is a resource of virtually no consequence in the sum total of her natural wealth. The Coal Land Law enacted by Congress back in 1873 had little local interest. Outside of the one main coal field, coal of a sort, but of very doubtful quality and far inferior to even the poorest product mined further east, had been uncovered by prospectors ranging up and down the State during the closing years of the last century. The Coal Land Law, therefore, which provided for the entry and purchase of proven coal lands up to 160 acres for an individual and 640 acres for an association, resulted in only 5,535 acres of public lands passing into private ownership in the entire State.

The sale of coal lands in California at the prices set by the law of \$10 per acre within 15 miles of a railroad, and \$15 per acre if over 15 miles distant from this form of transportation, resulted in a return to the Federal Government of only \$74,997.00. Nevertheless, as a precaution in the protection of public interests, the Federal Government did reserve the right to coal deposits on 17,643 acres of California lands on which there was a possibility of later coal discoveries.

### Petroleum

Petroleum products from California lands were rapidly pushing towards the point where the monetary worth of the product would eclipse the value of gold production in the palmiest days of





gold mining. California was found to be blessed with a supply of the "black gold" which was later to prove a major element of civilization in war and peace. It revolutionized commerce, and changed the lives of mankind all over the earth. Unlike the gold rush use of lands, but marked with almost equal excitement and color, a saner land use has characterized oil mining. While exploitation, land-grabbing and scandals have marked its history, better laws have thrown a protective screen around it.

By the end of the 19th Century a total of eight major oil fields had been opened in Southern California and the Southern San Joaquin Valley and these fields exceeded all expectations in volume of output. Those opened in the nineties included the McKittrick, Midway-Sunset, Coalinga, Kern River and the Los Angeles-Salt Lake fields. It was in the last named that E. L. Doheny in 1903 started on his long and colorful career in California's oil industry. Working with a single partner and using only a pick, shovel and crude hand windlass, he and his associate brought in a small well and proved the existence of oil in large quantities in that section.

Residents of Santa Barbara County were thrown into a wild fever of excitement when in 1898 oil in large quantities was discovered close to the surface beneath the beach sands just south of the City of Santa Barbara. In a rush similar to the boom days of forty-nine, claims were staked out for miles up and down the shoreline. It was here that oil wells went to sea, as it were, and the Seaside Oil Company, with its oil derricks at the end of long piers jutting out into the ocean, came into existence. Four years later the Santa Maria-Lompoc oil field just to the north was opened up.

By 1905 the oil industry in California, compared to later production, had hardly gotten started, and new uses were constantly being found for petroleum products. Coal to provide the motive power for California's railroads and for her industries generally, had always been a serious problem, since the volume produced west of the Sierra Nevadas was but a drop in the bucket to her needs. In fact, the total coal production in California in 1899, according to State figures, was valued at \$420,109 and this figure had gone down to \$144,500 in 1905, and to nothing in subsequent years. E. L. Doheny again stepped into the oil development picture when he sold the idea to the railroads of using oil instead of coal for firing their locomotives. The new fuel was soon almost universally adopted in California not only by the railroads but by general industry as well.

With discovery of the immense reservoirs of oil lying beneath California lands it was an inevitable consequence that large





corporations and combines would take advantage of this new source of wealth. While small independent "wildcatters" - individuals and companies - were mainly responsible for the prospecting and original tapping of the oil fields, the larger concerns gradually took over the bulk of the operation.

The Union Oil Company in 1890 bought out several small firms and became a dominant factor in the California fields. It was not until 1900 that the Standard Oil Company of New Jersey came upon the California scene and became also the Standard Oil Company of California. To the credit of these companies and their later large competitors it must be said that while piling up immense profits for their stockholders, they played the major part in the State's oil development, both in the production of crude oil and in the manufacture of diversified products from the crude oil base.

Shortly after commencing operations in California, the Standard Oil Company started construction of a pipe line to convey crude oil from the Kern River field to Point Richmond on San Francisco Bay. Farmers along the route laughed at the idea as a rich corporation's dream and jokingly remarked that they would send their milk to market through the pipeline when it was found that the thick, viscous fluid failed to flow. Nevertheless, this immense project, the forerunner of many similar projects, was completed in 1905 and proved successful.

The State Mining Bureau listed California's petroleum production of 1899 as 2,677,875 barrels, having a cash market value of \$2,660,793. In 1902 their figures showed an output of 14,356,910 barrels, big scale production having forced the cash value of this volume down to \$4,692,189. The total annual production in 1905 had increased to 34,275,700 barrels, with a market value of \$9,007,820.

Production of natural gas, the companion of petroleum development, had hardly begun in California by 1905. The 1899 production of 115,110,000 cubic feet had grown to a volume of only 148,345,000 cubic feet in the year 1905. This natural product, which was to contribute so much to better living in the rural-urban communities as well as in the larger cities, did not get into its real stride till several years later.

Many of the experts of the sixties, seventies and eighties minimized the extent, value and versatility of California's petroleum deposits. They were later proven entirely wrong. As late as 1888 the great historian, H. H. Bancroft, reflecting the belief of many of these experts, greatly belittled the value of the California oil deposits and predicted that they would not last in the face of competition with petroleum deposits from the Eastern fields.



It can be repeated that mining for California's "black gold" never created the land devastation which resulted from the extraction of the yellow gold from the earth. To begin with, most of the oil fields were located on lands unfit for crop agriculture. The act of boring a small verticle tunnel hundreds and thousands of feet into the bowels of the earth was a whole lot different from directing a stream of water through a high pressure nozzle and washing away whole mountains of soil to choke river channels and destroy potential farm lands.

Agricultural and gold mining interests still clashed throughout California and citizens interested in the proper use of the wild land itself gnashed their teeth as they watched the continued havoc in the hills. By the Act of April 23, 1880, the State Legislature had imposed a tax of one percent on hydraulic mining which afforded some slight reparation for the damage done. However, it was not until 1893 that public opinion was sufficiently aroused to bring about the passage by the United States Congress of the Hydraulic Mining Law. This law prohibited this method of mining where damage to agricultural lands would result thereby.

The new law did not stop hydraulic mining but it emphatically stated that "hydraulic mining may be carried on wherever and whenever the same can be carried on without material injury to the navigable streams or the lands adjacent thereto". At that time a State Debris Commission was appointed to consult and advise with United States Army Engineers on flood control problems. \$250,000 was appropriated to be used, in the phraseology of the law, "for construction of works for the retaining and impounding of debris resulting from mining operations, natural erosion or other causes". Hydraulic mining in California was now definitely under government control, since the new legislation also provided that this form of mining could not be carried on without a special permit from the State Debris Commission.

### Lumbering

Meanwhile the lumbermen of the East were casting longing eyes on the big trees of the Pacific slope. Destructive logging, followed by devastating fires, had marked the progress of the lumbering industry in the Great Lakes region. Millions of acres of the white pine zone of Michigan and neighboring states were now virtually a waste as far as commercial forest was concerned and by the end of the Nineteenth Century the final doom of the virgin forests of that section was definitely in sight. In spite of the great forest resources in California, and the immense amount of building construction necessar





in the settlement of new lands and the building of cities, the State had been an importer in the sum total of local timber use. However, foundations were being laid for greater lumber production later.

The history of lumbering in the Sierra Nevadas is irrevocably tied into the history of scores of urban centers and farming communities up and down the great valley lying just below the timbered mountain range. The ruggedness of the terrain made wagon hauling from the timbered area to the lower elevations a costly affair and in the days prior to modern road-building methods and motor transportation, fluming of lumber became a common practice. By this method the roughly processed products of the native trees were transported by water flumes to central finishing and manufacturing plants. Products were sometimes sent long distances by this means of transportation. Built of native materials, these early-day lumber flumes cost from \$1,000 to \$20,000 or more per mile, depending upon the terrain and such factors as natural waterways. Their maintenance cost was also high. Square timbers and rough-sawn lumber were whisked down by the rushing waters of these flumes, after their first rough manufacture in mills located on or near the area being logged. Thus California's mountain waters not only served the miner to wash his gold, and the farmer to irrigate his crops, but for several decades also served the lumberman in transporting his products.

One of these early flume loggers was the Madera Sugar Pine Company which started its operations as the California Lumber Company in 1874. This concern operated a flume sixty miles in length sending its products from a mill pond at Sugar Pine, south of Wawona near Yosemite Valley, to a mill at Madera. A somewhat similar enterprise was the Fresno Flume and Irrigating Company which, as the name implies, doubled up on water use as its products were washed down a fifty-mile flume from Shaver Lake to the firm's headquarters at Clovis in Fresno County. This firm, established in the late eighties, continued lumbering operations for almost fifty years when it made way for hydro-electric development in selling its holdings to the Southern California Edison Company. Both these concerns, operating in the same general area, hauled logs to their rough cutup plants in the woods by railroad. Each cut approximately forty million board feet of lumber annually.

Probably the largest flume lumbering operation in California was the Hume-Bennett Lumber Company. Starting in 1887 as the Kings River Lumber Company, the Hume-Bennett interests commenced their mountain sawmill at Millwood in the Converse Basin logging by the use of bull teams. The rough lumber was floated down a million-dollar flume, sixty miles in length,





to a planing and manufacturing plant at Sanger, where it was processed for market. This big flume lumbering venture had a stormy history and the original operators met with financial disaster in 1893. Reorganized as the Sanger Lumber Company in 1897, it was taken over ten years later by the Hume-Bennett people. By 1904 these operators had cut over 16,000 acres and still had 20,000 acres of virgin timber left. Under the liberal land laws in existence at the time, it was able to trade 5,000 acres of cutover land for land scrip with which to secure more virgin timber. A lot of fine sequoia trees were cut in this logging operation and by 1905 the cutover lands were a duplicate of many such areas along the entire length of the western Sierra Nevada slope. By this time, as a result of logging and uncontrolled fires in the remaining slashings, 10,000 acres of the firm's logged-off lands, formerly an outstanding virgin forest of giant sequoias, pine and fir, supported only a dense, impenetrable stand of chaparral.

In the northern mountain section of the State other lumbering ventures were becoming firmly established. The Benton Lumber Company, founded by the family of Mrs. (General) John C. Fremont, commenced operations with the idea in mind of floating logs down Pit River to the flat lands of the Sacramento Valley, under the same system of logging operations practiced in the Great Lake States. This venture proved a failure. Although blessed with plenty of water during flood periods, the channel of Pit River was too tortuous and rocky to lend itself to log-driving operations. Moreover, a greater drawback lay in the fact that the sugar pine, jeffrey pine and yellow pine of the Sierras did not possess the buoyancy of the white pine of the East and many logs failed to float. This particular venture--the same type of which was tried out on a smaller scale in other sections of the State--gave added proof that California was different and the methods of land use had to be adapted to these new conditions.

The Shasta Land and Timber Company, logging in the higher mountains, had a twenty-mile lumber flume down the rugged course of Montgomery Creek, transporting the woods' products to the hamlet of Bella Vista, in the foothill region. From this point they were carried by a narrow gauge railroad to the company's manufacturing center in the town of Anderson.

Scott and Arsdale originally located at the town of Sisson--now Mount Shasta--in 1888. Because of trouble developing with the town authorities, they moved their plant twenty miles farther into the mountains where in 1903 the McCloud River Lumber Company took over the operation and founded the manufacturing plant and town of McCloud. This operation later became a leader in California lumber production.



Weed was started by Abner Weed in 1897. This marked the beginning of the large mills and town of Weed operated by the Long Bell Lumber Company.

The immense redwood forests of the North Coast were furnishing half the volume of California's lumber production; redwood being the only lumber species exported. This soft, durable timber was finding an increasing market in the State with the increase of viticulture since it was used almost to the exclusion of other species for grape stakes. Various kinds of fabricated roofing were not yet in the market to any appreciable extent, and redwood was also being used extensively in the manufacture of shingles. Cooperage stock, to which this timber lent itself readily, was being quite heavily exported, just as barrel staves had been even back in the days of Spanish occupation a century before.

Some three score mills were operating in the redwood belt. The town of Eureka, with the only harbor of consequence north of San Francisco along the State coast line, was fast becoming one of the important lumber ports of the world.

The giant redwood trees, first discovered by the explorer, Portola, in 1769, were proving a big asset in the State's industrial life. The lumber interests in this region were engaged in harvesting a crop which nature had been many centuries in the making, with no thought to any future use of the lands reproducing the only tree of its kind in the world.

In addition to these major lumbering ventures many smaller concerns were operating in the timbered sections of the State. The Bureau of the Census states that in 1899 there were 276 lumbering establishments employing 10,644 wage earners. The production that year was 736,496,000 board feet, almost half of which was redwood. In 1904 the same authority lists 308 establishments in operation, with 13,180 employees and an annual cut of 1,077,000,000 board feet of lumber.

#### Lavish Forest Use

Whether the timber operation was merely a two-man outfit with an ox team dragging a few logs a day to a crude sawmill cutting boards for local use, or one in which the annual output ran into many millions of board feet, the treatment of the forests was just the same. This followed literally the practice of the early-day gold miners in that it was a case of "cut out and get out."





It is quite safe to say that many small-sized logging operations and their companion sawmills in existence in California at the close of the last century could still be operating on a permanently prosperous basis had their owners considered timber as a renewable crop which could, under intelligent harvesting and proper care of the land, provide a profitable and sustaining land tenure. Settlement was too new, and California still too much in the swaddling stage of its growth to realize this fact, even tho some far-sighted patriots were beginning to learn from the lesson of forest devastation farther east. The timber operator cannot be entirely blamed, in view of the lavish, apparently limitless, giving-away land policy of his own government, which unintentionally patterned the laws to fit the very practices being followed.

Back in June 30, 1879, Carl Schurtz, Secretary of the Interior, in his annual report for that year had written: "The waste and destruction of the redwood and the big trees of California have been and continue to be so great as to cause apprehension that these species of trees, the noblest and oldest in the world, will entirely disappear unless some means be taken to preserve at least a portion of them". Schurtz in the same report also deplored the passage of the Timber and Stone Act of June 3, 1878 which he characterized as a law which would "stimulate a wasteful consumption beyond actual needs and lead to wanton destruction".

The comparatively easy methods by which land, and particularly timberland, could be acquired by private owners was daily adding to the possessions of the bigger landowners at the expense of the public pocketbook. Redwood, pine and even the giant sequoias--the largest trees on earth--all suffered before curbs were finally placed on private profiteering on public lands. One operator in the southern Sierra region cut one group of three of the giant sequoias standing close together and occupying almost an acre of land. These trees, twenty-two, twenty-three and twenty-six feet (not inches) in diameter, respectively, manufactured 400,000 board feet of lumber which at current market prices would net the owner some \$4,000.00. The government--or public--on the basis of prices imposed by the Timber and Stone Act, received \$2.50 for these trees.

Partly because it was better known and more easily accessible and partly because of the generally higher stand per acre, the comparatively narrow strip of land comprising the redwood belt of the State passed more quickly than the lands of the remoter pine region into the hands of private owners under the liberal provisions of this Timber and Stone Act of 1878.





Around the turn of the century, General Land Office agents reported that an English concern had acquired one hundred thousand acres of the choicest redwood lands at an approximate cost of \$3.00 per acre. Since the government received but \$2.50 per acre under the law, the other half dollar was evidently expended for surveys, land locator fees and such little remuneration as was necessary to individual entrymen. These entrymen had slight interest in the lands for the acquisition of which their names were being borrowed. Their only interest was the compensation they received for the use of their names.

The gigantic nature of such a "steal" can be more vividly realized when it is recalled that many single acres of redwood timber have yielded a cut as high as 1,000,000 board feet of lumber and the net profit to the operator on such an acre could easily be \$10,000.00. Such yields are not common but average production of 100,000 board feet per acre is the rule.

Such cases as the one just quoted, repeated on a perhaps somewhat lesser scale in the pine timbered sections, had the effect of creating the feeling among the more intelligent citizens of the State that something just had to be done to curb practices by which an individual could secure land belonging to the seventy-five million people of the American Commonwealth at a discount of several hundred percent of its true value. The pressure of these thinking groups was beginning to have its effect on both the national and State lawmakers and during the period from 1890 to 1905 probably more drastic legislation dealing with public lands--mainly wild lands--took place than during any similar period of the State's history.

#### Official State and Federal Land Activities

The State Legislature was very much disposed to lean heavily on the Federal Government for legislation dealing with its natural resources, which was perhaps quite logical since in the early nineties around two-thirds of the State's area was yet the property of the national government.

In 1897 California's lawmaking body made quite an intensive study of lands within the borders of the State. The 57 counties then in existence were covered by a County Classification Act. Several new counties had been created during the eight or ten preceding years. Orange, embracing one million acres of fertile coast plain lands, was carved from Los Angeles County in 1889. Colusa County was divided in 1891 to form the new, rich agricultural County of Glenn, with an area of 842,880 acres. In 1891 also, that portion of Fresno County lying north of the San Joaquin River and containing 1,374,720 acres,



was set aside to form Madera County. The same year chunks were cut from southern San Bernardino and eastern San Diego Counties, respectively, and Riverside County of over four and a half million acres came into existence.

At the same time, Kings County was created by cutting off 892,000 acres from the west side of Tulare County. Altho some few minor boundary changes were made in later years, no new counties were created after this time except Imperial, which was organized in 1907 by slicing off 2,741,760 acres of desert and converted desert lands from the east side of San Diego County. To facilitate land use representation, the State Agricultural Society in 1899 re-divided the State area into 44 agricultural districts, conforming closely to the political boundaries established by the Legislature.

In March 1893, a special act of the State Legislature authorized the periodic issuance of a Blue Book of California which since that time has furnished figures as an authority on many factors of the economic and industrial development of the State. Figures from this source indicate that in 1899 three-fourths of the State area had been officially surveyed; that there were 1,720,000 acres of swamp and overflowed lands most of which had been surveyed and patented; that 8,385,375 acres of private land grants had been settled, with title yet pending on 341,650 acres of these old grants. The volume also listed 318,000 acres as included in Indian military reservations.

In its biennial report for 1891-92 to the governor, the State Board of Forestry frankly admits failure in control of fires on wild lands throughout the State, pointing out the inadequacy of funds to afford any sensible measure of protection. They sound an optimistic note, however, in citing recent Federal legislation which has resulted in the use of United States troops for forest fire patrol and express themselves as hopeful that good results will be obtained from the same. The custodians of the State's funds were apparently somewhat frightened at the figures presented by the State's forestry officials as being necessary for any form of adequate protection for the wild lands of the State, so left the matter entirely up to the chance of the Federal Government bodily taking over the responsibility.

In his annual message to the Legislature in 1903, Governor H. H. Markham recommended that the State assume its share of responsibility for timberland protection by simply passing the buck back to the counties, now classified and pretty well organized. He suggested that the counties be authorized to employ fire wardens, to be paid by the day when actually employed, in lieu of the county fire agent system which had





proven a failure. The California authorities were apparently very much deadlocked on a matter which they knew was intensely vital to the State's best interests.

It must be remembered that about ten percent of the entire area of public lands in California had been given to the State by the Federal Government. In following the pattern of the national policy, the alarming rate at which the State was disposing of its choicest timberlands for a mere pittance of \$1.25 per acre was probably one of the reasons for public pressure being brought to bear for some change in such a policy and for better protection of the immense watersheds and the wild lands which closely circled the fertile valley areas in all sections of the State.

George C. Pardee, succeeding H. H. Markham as Governor, was an ardent exponent of proper and intelligent land use. Due mainly to his efforts, the State Board of Forestry, abandoned during the preceding administration, was re-created in 1905. The new board consisted of the Governor, the Secretary of State, the Attorney-General and a paid State Forester. E. T. Allen was the first man to occupy the last named position.

Meanwhile, the Federal Government had not been idle on legislation affecting public lands and particularly timberlands. On March 3, 1891 Congress enacted a law which was to have a far reaching effect and which placed the first real damper on land-grabbing activities within the fast-shrinking public domain. This law, known as the Forest Reserve Act, provided in part as follows:

"That the President of the United States may, from time to time, set apart and reserve, in any State or Territory having public land bearing forests, in any part of the public lands wholly or in part covered with timber or undergrowth, whether of commercial value or not, as public reservations; and the President shall, by public proclamation, declare the establishment of such reservation and the limits thereof."

Simultaneously with the passage of the Forest Reserve Act, the national legislators repealed the Timber Culture Act of 1873, the provisions of which, amended from time to time through the years, had allowed an entryman to secure title to a quarter of a section of land by planting and caring for a specified number of trees per acre on a small portion of the quarter section involved. Although the land was free, considerable cost was involved in planting and caring for the trees and with the liberal provisions of the later Timber and Stone Act available, the Timber Culture Law had little appeal to the California land monopolists. During its operation a total area of only 63,572 acres of public lands in California passed into private ownership.



Recognizing the handwriting on the wall following the passage of the Forest Reserve Act, timberland locators went to work in real earnest in California in land acquisition under the Timber and Stone Law. Gangs of men were gathered from the cheap lodging houses of the cities and taken on excursions to areas where the big trees grew. It was a profitable picnic for this type of entryman who could secure several days free board and lodging, a nice little vacation trip to the mountains and more cash in hand than they could earn in two months or more of hard labor, all for merely signing a couple of papers.

Sometimes the filing papers and deed to 160 acres of land were executed by the entryman the same day. Generally, but not always, the big timberland grabbers insisted that their locator make one superficial concession to the provisions of the law by having the entryman get out personally on the land on which he was filing. The entryman himself was legally protected and could soothe any qualms of conscience he might have by arguing with himself that the act of becoming a landed proprietor of 160 acres of public domain for a few days, or a few hours, in view of the compensation received was distinctly for his own personal "use and benefit". The locator took all the responsibility of any possible future trouble with Uncle Sam's men on the matter.

Of the millions of acres of California's choicest timberlands which passed into the hands of private owners through the working of the Timber and Stone Act in the interim between the passage of the Forest Reserve Act and the inclusion of this type of lands within forest reserves, and previously to that period, it is safe to say that only a fraction of one percent of such lands were ever used for any purpose by the entryman personally. During the workings of this Timber and Stone Act, entries in California reached a total of 2,879,466 acres, with the exception of Oregon, a greater area than was secured by private owners in any of the twenty-three states in which the Act was operative.

#### The New Forest Reserves

Southern California, ever seeking water for her fertile but arid lands, was the first section in California to secure watershed protection under the new Federal Reserve Law when on December 20, 1892 President Benjamin Harrison proclaimed the creation of the San Gabriel Forest Reserve of 555,520 acres in Los Angeles County. This was followed by the creation on February 25, 1893 of an additional reserve of 737,280 acres in the San Bernardino Mountains and of the Trabuco Reserve further to the south and west of approximately 50,000 acres more, the beginning of the present Cleveland National Forest.





There was no doubt in the minds of the more intelligent citizen of the Southern California section as to the need of these reserves. There were little timber values at stake, but year after year they had seen uncontrolled fires burning the brush cover from their protecting hills. The resultant disaster to valley areas during the ensuing winter as these pelting winter rains, lashing at the bare, fireswept hillsides was evident. Uncounted tons of silt and boulders were carried down over the farmlands to wipe out a decade of work and the lifetime savings of scores of farmers. Or they had seen prosperous urban centers presenting the appearance not only of having been torn asunder by a giant cyclone but with boulders and debris piled pell mell over the area in places almost burying the homes of the residents. Floods, as an aftermath of forest fires, had already cost Southern California residents millions of dollars in property losses and taken a heavy toll of human life.

Further north, in the pine-timbered region of the Central Sierra Nevadas, President Harrison set aside another large area when on February 14, 1893, 4,007,000 acres were withdrawn as the Sierra Forest Reserve. It will be remembered that back in 1864 in this same general locality the Federal Government had ceded to California as a public trust the great Yosemite area and the Mariposa grove of giant sequoias. The Sequoia and General Grant National Parks were created by Presidential proclamation on October 1, 1890 and now with the creation of a large forest reserve a large part of one of the greatest mountain areas of the American continent was saved to the public for all time.

United States troops were given charge of the National Parks and the term "National" was justified when the State of California in 1905 turned the Yosemite area back to the Federal Government as the property of all Americans.

This mountain section of the State was now pretty well known throughout the nation. As far back as 1883 President Hayes had visited the Yosemite Park with a party of twelve other well-known Easterners and government officials. Nature-loving Theodore Roosevelt, one of the world's foremost exponents of outdoor life, had camped beneath the mighty sequoias with his friend, John Muir, and John Muir's writings had brought home to millions printed messages describing the charm of the High Sierras against the exploitation and misuse of which the great naturalist had devoted his life.

Joseph LeConte and other leading authorities had vaunted the outstanding features of this Switzerland of America, with its numerous waterfalls, its towering, odd-shaped mountain spires and especially its gigantic trees. Through the hollowed-out trunk of one such tree which had fallen, a man would ride a horse at a full gallop. The great Yosemite and its environs





were now safe from exploitation and misuse. As a forerunner of the millions to follow, the first automobile made its way into the Yosemite in 1900. Later the pioneer autoists of that time were limited within the precincts of the National Park area to a speed of six miles per hour.

Big landowners, seeking to add still more acres to their vast land empires, were naturally much against any laws which imposed restrictions on public land acquisition. They were particularly opposed to the creation of forest reserves which placed a ban on their land-grabbing activities. Undoubtedly, these heavily financed interests were able to bring pressure in high places and hire the best lawyers and lobbyists in the land, for we find that a hiatus occurred in the withdrawal of public lands after the five million-odd acres were set aside in late 1892 and early 1893.

In 1897 President Wm. McKinley added 691,000 acres to the Cleveland Forest Reserve in Southern California and the next year created what was later the Santa Barbara Reserve (and still later called Los Padres National Forest) of 1,144,594 acres lying in the southern and central Coast Ranges. This ended forest reserve proclamation till 1904 except for a 69,000-acre withdrawal from the Cleveland Reserve in 1900.

The death of President Wm. McKinley at the hands of an assassin in 1901 landed the virile Theodore Roosevelt in the White House as the youngest chief executive ever to lead the American people. Roosevelt knew and loved the West--and California. One of the most ardent conservationists of all times, his theories of land use were gained from personal contact with the soil itself and from Gifford Pinchot. Forests, water, agriculture and industrial development were irrevocably tied together in his ideals of proper land management, and his subsequent acts while in office proved that he was in actuality the bitter foe of land monopolists. With his characteristic thoroughness, President Roosevelt did not immediately add to the Forest Reserves area created in California by his predecessors but in 1903 appointed a Public Lands Commission charged with a thorough study of the entire public lands situation.

This public lands commission uncovered many evils surrounding the use and misuse of the remaining public domain in California. Encroachment of transient sheep on public ranges, which were a natural adjunct to lands owned for decades by pioneer farmers and cowmen, was still a leading land use problem. These tramp sheepmen had discovered the remotest parts of California's mountain areas and had spread over into Oregon and Nevada. Feeble taxation efforts of mountain counties failed to save the forage consumed by these non-resident stock, or to stop forest fires which their owners often started.



In the late nineties in Modoc County, in the extreme north-eastern corner of the State, a county tax gatherer collected fees on 90,000 head of sheep within an area of around 100,000 acres, and the following year another official of this same county imposed taxes on 120,000 sheep, besides their lambs, on approximately 200,000 acres.

The passing of these sheep over mountain lands left the feed eaten into the very ground and the range mere dust beds. Here and there throughout the State, permanently located livestock producers, both cowmen and sheepmen, were sending petitions to Washington asking for the creation of forest reserves. In spite of the fact that stockmen later on, organized and individually, bitterly fought the orderly administration of these reserves, many of such areas were originally set aside as a result of these local petitions.

Seemingly in the nature of an apology for making possible the creation of forest reserves, Congress enacted legislation which appeared somewhat of a sop to the interests concerned in grabbing off big chunks of timberland. Justly, and in accordance with the true principles of democracy, land laws have ever favored the veterans of our armed forces, a fact, however, which was sometimes greatly to the advantage of the land-grabbers. One such law, intended for the benefit of veterans of the Civil War and other campaigns, was that passed by Congress on December 13, 1894 which provided that bounty land warrants, previously or afterwards issued, could be used for the purchase of any public lands entered under the Timber and Stone Act, the Timber Culture Act and other land laws at the rate of \$1.25 per acre, immediate possession being given the entryman purchaser. It is hardly necessary to point out that while war veterans received some pecuniary benefit under this bounty act, the bulk of the lands quickly passed into the hands of the bigger landowners.

The Forest Lieu Selection Law passed in 1897 was another sinecure for big timberland owners since it provided that lands covered by entries in a forest reserve could be exchanged for similar areas of land elsewhere. This law not only made possible the consolidation of private land holdings but opened up an avenue whereby lands of inferior value could be exchanged for more valuable or more easily accessible lands elsewhere. The intent of the law was good, since it was primarily designed to consolidate public land holdings in the forest reserves. It worked in reverse, however, and was the basis for a lot of manipulation of shady land deals. This Forest Lieu Selection Law was repealed by Congress early in 1905.

Among the recommendations and findings of President Roosevelt's Land Commission, after a study of public lands and the operation





of the existing land laws, were that provision be made to survey agricultural possibilities of the remaining public domain; that steps be taken for the purchase of private lands inside forest reserves and for the exchange of private lands inside these reserves in order to consolidate Government holdings; and that the repeal of the Timber and Stone Act of 1878 was necessary to stop land-grabbing on a large scale. The Commission also recommended that the President be authorized to set aside grazing districts by proclamation in somewhat the same manner as forest reserves.

The Commission stressed the weakness of existing land laws which so obviously had the effect of creating large land holdings, citing the fact to the President and Congress--already locally known--that the number of new homes on public lands were so few in number as to be out of all proportion to the number of individual patents granted. Four decades later it is still realized how sound some of these recommendations of this Public Lands Commission were. Some of them went into effect years later, and some even waited merely in the form of recommendations until another great conservationist of the same name occupied the chair in the White House.

President Theodore Roosevelt resumed action under the authority given by the Forest Reserve Act when in 1904 almost 600,000 acres were set aside in the northernmost section of the State by the creation of the Modoc and Warner Mountains Reserves in Modoc County. The following year his withdrawals covered almost the entire scope of the pine timbered belt of the State when the Plumas, Klamath, Lassen, Trinity and Tahoe Reserves were created, and about a million acres added to the Sierra Forest Reserve.

In seeking to halt exploitation of the nation's timberlands, President Roosevelt emphasized the need for such withdrawals and for the protection of forested areas generally by the statement: "The forest problem is in many ways the most vital internal problem of the United States". By 1905 a total area of 14,693,000 acres was included within the forest reserves in the State of California.

#### Forest Reserve Administration

The Forest Reserves were something new in California land use. Forestry, practiced in Europe for centuries and forced on the older lands by economic needs for wood and forest products, was practically unknown in the United States of America. For over a century the people of the great western section of the United States, if they were unable to secure what they wanted from their individually-owned lands, were wont to merely go out and take what was needed from the vast public domain.



Why not? Was not this the great "Commons" of all the people, and had not their forbears fought for the very principle which refused to recognize "reserved" or "crown lands" in the new freedom of living? In the nineties, therefore, such forest reserves as had been created were used in pretty much the same way as the Western public domain had always been used, free to all comers. The only exception was that the public lands included in these reserves were not open to settlement and entry under the current land laws. It looked somewhat then as if this new move to save public lands for public use, probably the greatest conservation move to ever take place in the nation's history, was doomed to failure.

In theory the forest reserves existed, but in actual practice the lands included within their boundaries were handled no differently from those on the unreserved public domain. Grazing trespass by transient stock continued and timber was cut in trespass wherever and whenever residents needed trees. Government officials had been so long engaged in getting rid of land that any other method of handling it contrary to this policy was entirely unfamiliar to them. In a sense one can imagine those old time federal public servants shrugging their shoulders and saying: "Well, what can we do about it? Our business is giving away and selling land; we don't know anything about taking care of it".

In 1894, T. P. Lukens, Special Agent of the General Land Office and afterwards one of the first federal forest officers in California, reported that an official of the Department of the Interior was sent out from Washington to stop sheep depredations in the new San Gabriel Forest Reserve where the grazing bands were badly damaging the watershed. This official stayed a few days on the ground then returned to the nation's capital having accomplished exactly nothing. Undoubtedly, this officer neither knew what he was supposed to do nor how to do it.

It was not until Congress passed the Administrative Act of June 24, 1897 that any real attempt was made to administer these newly acquired "reserves" of the people. This act more clearly defined the purposes of the Forest Reserves and broadened the powers of the government agency entrusted with their administration. However, the actual administration of the Forest Reserves was left entirely under the jurisdiction of the General Land Office, the special agency in the Department of the Interior whose main function had always been the giving away of lands to individuals, rather than reserving them for general use.

Since 1876 there had been a forestry agency in the Department of Agriculture and this agency was formally made the Division





of Forestry in 1881. There were already some very competent foresters in that agency by the end of the century. Gifford Pinchot was designated Chairman of this Division of Forestry in 1898.

From this Division of Forestry the Bureau of Forestry was created in 1901 in the words of the law "to handle the nation's forest research, develop planting methods, cooperate with timberland owners in timber management and serve in an advisory capacity to the General Land Office in the technical phases of administration of the Forest Reserves".

It seemed strange then, as it does now, that instead of placing the responsibility for administration of forest reserves entirely in a department devoted to the principles and practice of land use, the government placed it in the hands of a department and bureau, the members of which were neither foresters, lumbermen or stockmen, and whose methods of operation had always been diametrically opposed to the purposes of which the forest reserves were in theory created. Illustrating the anomaly of the situation, we find Abbot Kinney, leading national authority on intelligent use of natural resources, in his book "Forest and Water", published in 1900, giving vent to his feelings as follows:

"We thus have really skilled men in the Department of Agriculture, without power, and unskilled men in the Department of the Interior with such power as there is making rules and regulations or a system, and of appointing a number of executive officers...This entire plan of action has proved to be unsatisfactory. It has been inefficient in every particular. It is a practical failure."

Undoubtedly, politics entered largely into the situation. Nevertheless, it might be more charitable to believe that Eastern legislators, unacquainted with Western conditions had been accustomed to associate the General Land Office with all handling of public lands. Unquestionably, some of them had very vague ideas of the great public domain of the West and the problems connected therewith. Hearing so much about this time of the devastation and misuse of these public lands they had the perfectly honest idea of a cure-all in mind to the effect that the best thing to do was to lock up the timber and other resources in the new forest reserves and place them, in a manner speaking, in cold storage to be drawn upon as needed. In reading of the controversies of the day on the subject, it is little wonder that a section of the public were beginning to refer to the large withdrawals of lands as "preserves" and connecting them in a hazy way of thinking with "royal preserves" or "King's Forests", as such existed across the sea.





The General Land Office made an honest and valiant attempt to throw their former operation practices to the winds and administer the forest reserves under a new theory of land management. The Administrative Act of June 4, 1897 had set forth that the Secretary "may make such rules and regulations and establish such services as will insure the objects of the reservations, namely, to regulate their occupancy and use and prevent the forests thereon from destruction".

B. F. Allen was made the first Special Forest Agent and Supervisor in Charge of Forest Reserves in California and Arizona, a job involving the management of an area of land as large as some European principalities. Forest Superintendents were placed in charge of a group of forest reserves and Special Forest Agents were assigned the responsibility for the administration of individual forest reserve units. It must be borne in mind that these new administrative forestry officials were neither foresters nor stockmen, and that timber and range were the two main resources for the management of which they were made responsible. With all due respect to the innate honesty of these pioneer forest administrators, it must be stated that the handling of forest reserves by the General Land Office was a case of maladministration from the very start.

To begin with, definite rules and regulations were slow in coming from Washington to the men on the ground, mainly because the higher-ups knew neither the best methods of use of the land or the needs of its citizen-users. The foresters who had the knowledge and ability to promulgate such rules had no authority to do so. For a time there were no regulations whatever and one of the early forest superintendents expressed the bewilderment of himself and his associates when after a joint conference he asserted, "Our duties are new and undefined".

The main trouble of these field officers was with grazing administration. Although special legislation did in a way cover fire and timber trespass, no specific laws or regulations covered unauthorized grazing on public lands, either inside or outside the forest reserves. Responding to pressure of his field force, the Commissioner of the General Land Office on June 30, 1897 made a ruling that "the pasturing of livestock (except sheep) will not be interfered with so long as it appears that injury is not being done to the forest growth, or the rights of others jeopardized". This ruling was very good so far as it went, but since by 1898 Special Forest Supervisor Allen had only four men to handle the administration on a grand total of ten million acres of widely scattered, rugged mountain lands, it was a rather difficult matter for these local administrators to adjudicate or solve problems of land use of a nature of which they were admittedly abysmally ignorant.



There were no grazing fees, no established seasons for livestock grazing, and no limits on the numbers of stock which could be taken on forest reserve lands. By this time sheep had been part of the picture in the use of California wild lands for several decades and many of the flockmasters had become permanent land owners, leading citizens and respected members of their home communities. Most of this class, however, were placed in the same category as the tramp sheepmen by their almost hereditary foes, the more firmly entrenched cattlemen. This was one of the big range land use problems of the early-day forest reserve officers.

Although range wars between sheepmen and cattlemen in California never reached the proportions they did in other sections of the West, the situation was bad enough. Many shooting scrapes and half a dozen actual killings took place in the mountains of Fresno and Madera Counties. Because of the record of devastation of previous years plainly written on the mountains of California, sheep had a decidedly bad reputation and the firmly established citizen sheepman must perforce suffer with his tramp brother. The sponsors of the National Park "preservation" motive, notably the powerful Sierra Club, foster-father of the Yosemite area, were more or less obsessed with the idea that exclusion of sheep from the National Parks also meant their exclusion from the forest reserve area of the high Sierras, and bitter controversies over the matter lasted through many years.

In early 1898, Supervisor Allen repeatedly wired his superior in Washington for definite instructions concerning sheep grazing, but getting no results, wrote in detail to both Senator Stephen White and Congressman George C. Perkins asking them to intercede with the Secretary and Commissioner to allow sheep with established rights to use forest reserves under controlled management. Finally in April of that year, the Commissioner of the General Land Office wired the California forest reserve executive authorizing him to permit sheep to be driven to pasturage on private lands within forest reserves, with the admonition that the local officer was to grant this privilege "under the best regulations you can devise to minimize the damage".

Acting on this authority, a scheme was therefore worked out locally whereby a sheepman in possession of authority to use private lands within forest reserves could drive his stock to such lands under the supervision of a paid guide familiar with the route and the area in which the private lands were located. Since lumber companies had acquired considerable areas of timberlands within established reserves, the custom originated of leasing such lands to sheepmen for summer grazing, usually on a rental basis of one-third of the entire amount of taxes levied and assessed against such lands.





Generally, the tramp sheepman, with every man's hand against him, no place to go, and no vested interests to maintain, was able to outbid the more firmly established sheepman in the securing of these lands. Some of the larger and more permanent sheep interests had already built up large range land holdings of their own and by virtue of ownership of strategically located springs or watering places, definitely controlled the surrounding mountain range.

The "guide" system worked out very satisfactory--for the sheepmen. This employee, ostensibly hired to look out for public interests, was paid \$2.00 a day and found by the sheepman he was guiding through the mountains. Since the job was much easier than riding after cattle or pitching hay, the guide was usually never in a hurry to reach his destination. Forest reserve administrators in the mountains of California were few and far between, and unless some warning shots from a rancher or vaquero served as an incentive to speed up, the bands of sheep pursued a very leisurely way, and in many instances secured a summer's feed on and off the forest reserve enroute just as in the good old days of the range.

The undermanned and inexperienced field force of the General Land Office were doing the best they knew how in forest reserve administration. At the start they had little support from their superiors in Washington and failed to win the confidence of the local people.

It is passing strange that the first fire trespass case uncovered on the forest reserves in California by these pioneer forest officials was not perpetrated by a sheepman, but by a Fresno County cattleman. The government suffered defeat in the matter when one of its own United States Court judges threw the case out of court, deciding that the Secretary of the Interior could not define a crime under the Administrative Act of June 4, 1897, and only the Congress could say what act of trespass constituted a crime punishable by fine and imprisonment.

Things were not going too well in Forest Reserve administration when in 1898 Gifford Pinchot was made chairman of the Division of Forestry. When the organization attained the status of a regular government bureau in 1901, he was still retained as its head. A wiser choice could hardly have been made. Not only was Pinchot a professional and scientific forester but a good administrator as well, imbued with a deep sense of the responsibility of the land user to the land itself.

Like his friend and newly elected chief executive, the first head of the Forest Service had sufficient personal means to make him independent of any party or interests. From his previous research he was able to combine his studies of public



land use and forestry in the older parts of the world with the needs of the free and independent people of the new. Leading contemporary writers have justly said that to Roosevelt and Pinchot mainly, and in a lesser degree to James K. Garfield, Secretary of the Interior and James Wilson, Secretary of Agriculture, must go the credit for establishing at the beginning of the 20th Century a broad and constructive national policy of conservation.

There is little doubt but that Gifford Pinchot first popularized and perhaps actually coined the word "conservation", so much in current use at the present time but practically unknown until Pinchot commenced using it to cover a much wider range than it had ever had before. In spite of the fact that later organizations, government and private alike, whose policies can be more properly described as "preservation", adopted the term, to Pinchot and his organization must go the credit for the all-embracing meaning which the word "conservation" now represents. In Pinchot's vocabulary, conservation meant "use without abuse", "present utilization while providing for future needs", or in a word, "eating your cake and having it, too". Later on in 1910 President William Howard Taft in a public address brought out the extent to which this new term had permeated the national consciousness when he stated, "'Conservation' as an economic and political term has come to mean the preservation of our natural resources for economical use, so as to secure the greatest good to the greatest number".

The head of the new Bureau of the Forest Service was forced to make haste slowly. He was handicapped on the start by the fact that the functions of his agency were merely of an advisory nature to another government bureau committed to an entirely different conception of land use. He also had to sell the idea of land control and management to local populations using it. The chief of the new bureau found considerable local support in California besides the backing of his chief executive in Washington. A public-spirited element was putting up a hard fight to halt the wholesale operation of the Timber and Stone Law in the State. Three men outstanding in these efforts in the south central section of the State, particularly in efforts to save the remnants of the redwoods and the big sequoia trees, were Tipton Lindsey, former Land Office official, George W. Stewart, newspaperman of Visalia and John Tucky, of all things, a sheepman by vocation. Other supporters of conservation, including State Governor George C. Pardee, proved themselves good confederates. In 1903 President Roosevelt with Gifford Pinchot, John Muir and Governor Pardee, visited the Yosemite National Park and the surrounding area and on this visit the chief executive secured first-hand information which later brought about further reservations of public domain in the mountain sections of California.





## New Concepts of Land Use

By 1905 it was quite evident to all that the Forest Reserves were in the wrong department of the government and early that year they were transferred from the jurisdiction of the Interior Department to that of the Department of Agriculture. An exceptional feature was that laws relating to land entries of all kinds, the patenting thereof and such other activities as appertained to the transfer of lands in the name of the government, were still to be administered by the Department of the Interior. This included the administration of those laws relating to mining and minerals. Briefly, anything which had to do with the selling or giving away of land was still left in the hands of the Secretary of the Interior, whose department had been handling that line of business since the government had established it. However, the Department of Agriculture got what it had long been after, the handling of the growing things on public lands and active management of the lands on which they were grown.

On February 1, 1905, James Wilson, Secretary of Agriculture, in taking over this new responsibility wrote a detailed letter of instructions to Gifford Pinchot, Chief of the newly organized Forest Service. The principles expressed in this letter have ever since been the guiding principle of the government bureau engaged in administering the forest lands of the nation, and the basis of all its policies. In part it reads as follows:

"In the administration of the forest reserves it must be clearly borne in mind that all of the land is to be devoted to its most productive use for the permanent good of the whole people, and not for the temporary benefit of individuals or companies. All the resources of the forest reserves are for use, and this use must be brought about in a thoroughly prompt and business-like manner, under such restrictions only as will insure the permanence of these resources. The vital importance of forest reserves to the great industries of the Western States will be largely increased in the near future by the continued steady advance in settlement and development. The permanence of the resources of the reserves is therefore indispensable to continued prosperity, and the policy of this department for their protection and use will invariably be guided by this fact, always bearing in mind that the conservative use of these resources in no way conflicts with their permanent value.

"You will see to it that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the home builder first of all, upon whom depends the best permanent use of lands and resources alike. The continued prosperity of the agricultural, lumbering, mining, and livestock interests is directly dependent upon a permanent and accessible supply





of water, wood, and forage, as well as upon the present and future use of these resources under business-like regulations, enforced with promptness, effectiveness, and common sense. In the management of each reserve local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restrictions to minor industries as may be possible; sudden changes in industrial conditions will be avoided by gradual adjustment after due notice and where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run."

The infant bureau of the government, engaged in trying out theories of land use by which the people themselves were in a sense taking over the administration of their own lands under the predominating ideal of the greatest good to the greatest number of people for all time, had anything but clear sailing. This principle of land use by a government was entirely new. The chief executive of the nation fighting with all his vigorous strength against monopolization of lands and wealth was young; the Chief of the Forest Service was a young man and his field force--the men next the people and the soil--were almost universally young men also.

From the White House at Washington to the mountain ranges of the Pacific, the youthful government personnel were striving to explain to a free people this new idea of conservation and these people themselves were trying to understand it, in the realization that the boundless horizons of the past were limited, after all. In a subsequent chapter an attempt will be made to outline somewhat the struggle of these early-day forest rangers of the California mountains as they sought to prove the need of conservative methods of land use and the sincerity of their belief therein.

### Land and Water

Besides the laws resulting in the creation and administration of forest reserves, other laws of great importance to California lands were enacted during the decade and a half of 1890 to 1905. In 1894 the Carey Act gave to states up to one million acres of desert lands, provided irrigation works had been constructed and at least twenty acres of the one hundred and sixty which under this law was the limit which could be granted to any single settler were cultivated and under irrigation. The law proved an incentive to greater irrigation activity in all parts of the West.

With the constant shrinkage of public lands suitable for cultivation, the federal government was in every way encouraging development and settlement of the more arid lands generally



classed as the desert type. Figures of the General Land Office show that while entries up to the end of the Fiscal Year 1921, under the liberal provisions of the main desert land acts of March 3, 1877 and March 3, 1891, totalled 23,924 in California and embraced over five million acres, final patent resulted in only 841,556 acres passing into private ownership under these desert land laws.

June 17, 1902 witnessed the passage of the Reclamation Homestead Act. Under its provisions settlers were enabled to secure good agricultural lands free under the original homestead law but were required to make payments annually against the cost of construction of water projects built from public funds to irrigate such lands. This act also provided that all monies received from the sale of public lands in California be set aside in the United States treasury as a special fund to be used for the construction of irrigation projects in the State.

The following year the Bureau of Reclamation was formally created and later started water development from this fund which soon grew to sizeable proportions. Public lands brought under irrigation, both by government and private enterprise, provided a source of rural homes and living for veterans of the recent Spanish-American War and Philippine Insurrection, and a considerable volume of public lands passed into private ownership through the medium of veteran preference.

The State of California which had been even more dilatory with respect to water laws than in the passage of legislation relating to mining did, however, finally enact some very good laws supplementary to those of the Federal Government dealing with water problems. Along the lower reaches of the San Joaquin and Sacramento Rivers and up through the Sacramento Valley are large areas of low-lying, fertile farm lands. The proper drainage of these lands is of equal importance to their irrigation in the carrying on of intelligent farming operations. Water is a double header proposition on over a million acres, which even the liberal provisions of the existing laws could not exactly classify as swamp and overflowed areas. The importance of this drainage problem was recognized even in 1861 when the State created a board of drainage commissioners. The later law of 1872 authorized the creation of reclamation districts. An amendatory law passed in 1903 provided for the formation of districts for the development of any agricultural areas needing drainage and not classified as swamp and overflowed lands. This law of 1903 had a far-reaching effect on the later intensive development of large areas in the Interior Valley Region.

Water litigation in California continued to occupy the leading place on the court calendars. New settlers coming to California





were often warned by friends to "buy the water first and the land afterwards". Most of the land was practically valueless except for grain farming without the magic touch of water, and water was worth very much more than the basic value of the land itself. In Southern California lands going begging at \$10 per acre without water with assured water rights found ready buyers at a price as high as \$2,000 per acre.

The precious water was needed not only to insure profitable agricultural production but also to provide for the needs of the fast-growing urban centers as well and private and municipal water companies were organized in many communities, often for the dual purpose of irrigation and urban consumption. Private ventures in irrigation on large land holdings in the nineties cost a fortune. Two such, the Crocker-Huffman project and the Galloway Canal, each cost a million dollars to construct.

Many of the smaller land owners lived in constant dread of losing water rights, none too well defined under the existing laws. Elwood Mead, irrigation enthusiast and expert, afterwards Chief of the United States Reclamation Service, stated in the early years of the 20th Century, "The greatest boon which could be conferred on farmers and ditch owners of California would be relief from anxiety and expense of litigation over water rights". Mead, to whom California will ever owe a debt of gratitude for his aggressiveness in connection with water development, emphasized and re-emphasized the need for official arbiters to replace the constant, long, drawn-out expensive litigation over rights to the use of water.

Referring to the still prevalent big scale, dry-farming operations in the Sacramento Valley, Elwood Mead wrote in 1903:

"For nearly half a century the greater part of the land of this region has been devoted to the unremitting production of cereal crops. Each year the grain has been shipped away and the straw burned. Little or nothing has been done to restore the fertility of the soil. Although this surprising drain has gone on for fifty years it cannot continue forever. There must be a change; rotation crops must be introduced both to maintain the fertility of the soil and to render agriculture less hazardous and more profitable. Such rotation is not possible by rainfall alone. There is neither enough water nor is it rightly distributed....It is possible to make California one of the richest agricultural states in America but to do this requires that every river shall be diverted, that the floods shall be stored, and that every drop of the available water supply shall be used."

Because of the constant squabble over water rights in all sections of the State involving jealous hoarding of unused



water under the riparian law, over-appropriation of water and court injunctions, organization of irrigation districts under the Wright Act of 1887 moved slowly. The Central Irrigation District, located in Tehama and Glenn Counties and which was organized immediately after the Wright Act became law, furnished the first water to its district members in 1905.

In spite of the fact that the Wright Law was basically sound and considered the best state irrigation statute of the nation, weaknesses developed in the structure of the act and in its application. Competent State engineering supervision had not been provided for in its enactment, and small farmers who composed the bulk of the membership of the districts were not executives or businessmen. These farmers made poor deals in awarding construction contracts, sales of bonds and in other matters connected with district administration. Priority of users was not established by the law and many irrigators had to wait too long for their quota of water with resultant suffering to growing crops.

Pressure brought to bear by such organizations as the California Water and Forest Association had the effect of bringing about the passage in 1897 of the Bridgeford Act. This act amended and very much broadened the scope of the Wright Irrigation District Law, and more clearly defined procedure in the matter of property titles and similar matters. It also drew up a set of rules and regulations to cover irrigation district administration.

In spite of trouble over water rights and inadequacy of laws, irrigation development in California steadily progressed, speeded up to a great extent, undoubtedly, by the fact that the light winter rains between 1893 and 1903 created the most lengthy period of drouth years since the American occupation. Following this decade of dry years, the volume of precipitation took a decided upward curve in 1904 and 1905. These vagaries of California precipitation had a decided influence in bringing about demands for more and more water conservation, and to some extent also for better protection of the State's watersheds which formed the great water holding area.

As an illustration of the fluctuation of precipitation in California which apparently follows no definite standard of performance, the case of Goose Lake, in the extreme northeastern corner of the State, might be cited. In the extent of its lake bed, Goose Lake is next to Lake Tahoe and the Salton Sea, the largest body of fresh water in the State of California, if that part which lies in Oregon is included. In 1852 the emigrant trail into Oregon crossed the very center of the lake bed on dry land. In the fall of 1872 soldiers enroute from Fort Bidwell to the scene of the Modoc Indian War mired their pack horses in swamps created by water overflowing from





the south end of the lake. The water level dropped appreciably during the nineties but in 1912 the lake was again filled to overflowing. This large lake, approximately thirty miles long and seven miles wide, was again dry in 1920, the deeply-cut wagon tracks of the emigrants of the early fifties being plainly discernible. Rainfall charts of California covering any long period of years are so serrated that it is almost impossible to draw any median line.

One of the first districts organized under the Wright Act of 1887 was that of Modesto in Stanislaus County, a treeless region devoted exclusively to the growing of grain crops. This district embraced approximately 81,000 acres included in some one thousand farms, and the land had a general market valuation of \$30 per acre. A companion project organized at the same time was the Turlock District, a sandy area of 176,000 acres farther south in the same county. Like Modesto, such part of the Turlock District as was cultivated at all was producing indifferent crops of grain on low-valued land. In spite of short finances and litigation over water rights, the Turlock District managed to get its first water delivered in 1891 over 3,700 acres. By 1904, 20,000 acres were under irrigation in the district.

In the fruit-producing Santa Clara Valley, some orchards were irrigated, some were not. Water was mainly secured from wells by pumping and about 1,500 pumping plants were in operation in the Santa Clara Valley at the beginning of the century. A situation developed in this section which brought up a problem in connection with the use of underground water. Constant pumping during the irrigation season lowered the water table so that on unirrigated orchards the roots of trees which normally reached water no longer did so. In order to save their orchards, it was necessary, therefore, for the owners of unirrigated fruit farms to drill wells and reach down for their share of the underground waters.

The lowering of underground water levels in some parts of the San Joaquin Valley during the latter nineties so raised the cost of irrigation by well pumping that farmers, wherever possible within their means, developed water for gravity irrigation. This had the effect of again raising the underground water table so that in 1902 in some localities water was only six or seven feet beneath the surface, whereas the water table a few years previously had gone down to a depth of seventy feet.

#### Chaffey's Faith

The most ambitious irrigation enterprise of the period was that which brought water to the arid lands of Imperial Valley.





In 1898 George Chaffey, who in previous decades had performed such wonders with water in the Ontario section of Southern California, returned from Australia. There for 12 years he had played a leading part in the development of irrigation. Penniless, and with the expectation of getting a cool reception from his former associates for having deserted them to go across the sea, he found himself instead welcomed with open arms. Chaffey immediately plunged into broader land and water development schemes. He again saved the Ontario section from a water shortage and was able to recoup his own personal fortunes. Associating himself with the California Development Company, organized for the purpose of water development in the extreme southeastern corner of the State, he met the challenge of water development in that section.

For many years Southern California pioneer land developers had been eyeing the arid region since known as the Imperial Valley and the tremendous volume of water in the great Colorado River adjacent thereto. To George Chaffey almost alone goes the credit for first bringing the two together and founding the prosperity of the Imperial Valley area. After a reconnaissance of this desert region of the southwest, Chaffey announced that he could bring the waters of the Colorado to the arid lands of the adjacent valley for \$100,000, an absurdly low figure considering the volume of potential farm land at stake.

Chaffey went to work on the enterprise. The Colorado River, joint property of the United States and Mexico, drains an area of some 300,000 square miles in its 2,000 mile winding course. Its bed lies above the level of the Imperial Valley. The engineering problems involved were comparatively simple. The great irrigation engineer had water on some of the valley lands within twelve months from the time of starting construction work, and within two years had constructed a canal seventy miles in length which would carry sufficient water to irrigate 250,000 acres. Chaffey's canal, forerunner of the All-American Canal--one of the greatest irrigation projects in the world--ran for sixty of its seventy-mile length on Mexican soil.

In the face of obstacles which developed in connection with the construction of the project many less persistent men would have given up. Not so George Chaffey. When the concern which was ostensibly his employer became enmeshed in tangled finances, Chaffey pledged his own personal funds and credit in order that the work might go on and at one time assumed obligations of around \$400,000. Deals made by the California Development Company with Mexico for rights of way proved vague and uncertain, and in spite of the fact that Mexican farmers also benefited greatly by the canal project, trouble developed with the Mexican authorities. Again it took all



the enthusiasm and tact of the pioneer irrigator to keep the work from closing down. Other troubles developed through poor business management on the part of the California Development Company's officials, and for a time it looked as tho this ambitious irrigation scheme was doomed to failure.

Just as Chaffey got things running smoothly again, trouble developed in another quarter. The newly-formed Bureau of Irrigation was at the same time engaged in construction work on the neighboring Yuma Irrigation Project just over the State line in Arizona. It might have been because their engineers were jealous of the much more rapid progress being made by Chaffey's crews in contrast with their own that in 1902 this federal bureau publicly belittled the value of Imperial Valley lands, widely advertising the fact that their alkaline composition would render farming impossible. In 1902 their experts reported, "One hundred and twenty-five thousand acres of this land have already been taken up by prospective settlers, many of whom talk of planting crops which it will be absolutely impossible to grow. They must early find that it is useless to attempt their growth". These unproved charges were countered by Chaffey in a voluminous written protest to the President himself.

The faith of George Chaffey and other pioneers in this area, later justified, overrode the opinion of these government experts and later on in 1907 we find President Roosevelt, without blaming his Bureau of Reclamation for their former erroneous reports, announcing to Congress that there was no basis in fact for the alkaline scare created by officers of the government in connection with Imperial Valley lands. The President further stated that the area was capable of adding 350,000 to 500,000 to the country's population and that much of the land when watered would be worth \$500 to \$1,500 an acre, or a total of three hundred and fifty to seven hundred million dollars.

Still another land problem arose to bother the Imperial Valley settlers. Back in the seventies fraudulent land surveys had produced maps and plats which it was now found disagreed entirely with the topography of the area as it actually existed. Probably the old time surveyors found the going somewhat tough in the hot, arid region which they were mapping under government contract, and perhaps figured also that no one would ever want to use this desert country, anyway. The later results were that many Imperial Valley farmers had a great deal of difficulty in establishing title to the lands on which they had filed in good faith.

Although the promoters of the Imperial Valley project, the California Development Company, and incidentally Chaffey himself, profited by the enterprise, they treated the settlers





also very fairly in the matter of irrigation water. Water stock was sold on easy terms to settlers on the basis of one share for each acre owned at a maximum cost of \$20 per share, or per acre. Since the lands under irrigation had an average value of \$150 per acre and the cost to the settler of the land itself under the desert land laws was only \$1.25 per acre, thousands of families, the heads of many of which were veterans of recent foreign campaigns, got off to a good start in prosperous rural living.

The development and settlement of the Imperial Valley area exploded the fallacy that white men would not and could not live in the hot Colorado Desert section, a prediction made previously by many land experts. As time went on many freeholders developed the same love of the land, as characterized others of the same type in older settled sections of the State. At the beginning of 1905 there were 14,000 people in the district, seven prosperous towns, 780 miles of ditches, and 120,000 acres under irrigation.

George Chaffey severed connections with the Imperial area about this time, but not before he had founded the twin cities of Calexico in California and Mexicali in the Mexican republic, joined together at the international boundary line. Credit is given Chaffey for having donated the site of Calexico as his own personal gift. No personal profit whatever accrued to him as a result of this donation, and it is refreshing to know that unlike many pioneer builders, Chaffey was not pauperized by his efficient development of Imperial Valley, but retired from that field with a fair competence. It was no fault of his that tragedy stalked the project later.

George Chaffey, reclaimer of arid lands, left permanent impressions behind him in any part of rural California in which he labored. After leaving Imperial Valley he turned his attention once more to developing artesian water in Los Angeles County and the prosperous colony of Whittier was the result. Following this he was drawn into the Owens Valley Water Project, that area east of the Sierra Nevadas on which the City of Los Angeles was casting longing eyes as a new source of water supply.

#### Early-Day Electric Power

Among other monuments to the skill of this master of irrigation, there stood the Los Angeles Electric Light Company which he had organized even prior to his work on Australia's arid lands. This project, making Los Angeles City, among its other "firsts", the first city in America and perhaps in the world to be lighted by electricity.



Chaffey, welder of land and water, was not only an irrigation pioneer but also the first man in the West to file on mountain streams for hydro-electric development. His little power plant near Etiwanda, built in 1882 in connection with the irrigation development which produced the Ontario colony, was the first in California. This was followed by the San Antonio Light and Power Company which furnished electric energy for the Pomona colony at its environs.

In 1894 the Redlands Electric Light and Power Company commenced distribution from its plant on Mill Creek in the San Bernardino Mountains. In other sections of the State small hydro-electric power plants were being installed to serve nearby communities. The U. S. Bureau of the Census is responsible for the figures which show hydro-electric energy produced in California in 1889 as 393 H.P.; in 1899 as 15,762 H. P., and in 1904 as 49,575 H. P. Although this was a big growth, the figures are small in the light of later hydro-electric development.

#### Irrigation Growth

Again referring to the 12th U. S. Census report, we find that in 1900, although irrigation in California had only gotten away to a good start, as it were, the State ranked second among the States of the Union in the area of land irrigated. Colorado headed the list with 1,611,271 acres devoted to irrigation farming, while California was credited with irrigating 1,445,872 acres of farm land. An offsetting feature in comparing irrigation in the two States was the fact that out of California's total of 72,542 farms then being operated, 25,611, or 35.4 percent, were irrigated while the number of Colorado's irrigated farms was 17,613.

California showed a 44 percent increase in irrigated acreage over the federal checkup made a decade previously. However, with more small fruit farmers entering the picture, the number of irrigators had increased 87 percent. To again draw a comparison, the value of irrigated crops produced in California in 1899 was \$32,975,000, those of Colorado were valued at \$15,100,000, while the total value of irrigated crops produced in the entire United States was \$84,433,000.

The average value of California's irrigated farm lands was given at \$89.19 per acre. In that year of 1900 California had 25,675 irrigation water users. Of these, 18,675 were serviced by gravity flow irrigation, and 7,000 secured their water supply from wells. The number of water ditches is given in the census as 9,913, with a value of approximately twenty million dollars.





At the beginning of the century Los Angeles had the greatest number of irrigated farms of any county in the State with irrigation practiced on 4,066 of its 6,577 farms and 84,644 acres watered. Fresno County exceeded Los Angeles in area of land irrigated with a figure of 283,737 acres embraced in 2,459 of its 3,290 farms. The figures are indicative also of the larger-sized farms in the San Joaquin Valley. At this time farmers in all parts of the State were turning to the use of gasoline for motive power in pumping irrigation and in some sections using electrically-driven pumps. As late as 1900 nearly all the pumping plants in Santa Clara County were operated by steam engines.

#### Other Government Agencies

Meanwhile Federal and State bureau, other than those mentioned, were contributing to rural development in California. The Bureau of Animal Industry, charged with the protection of livestock against the spread of epidemic diseases, was established in 1894. Scabies among sheep, blackleg in cattle and similar infectious and contagious diseases among farm and range livestock were combated by officers of this bureau in cooperation with State authorities.

With a wide range of introduced fruit, cereal and nut crops and the fact that a wide variety of plant pests apparently thrived in the California climate, the creation of the Bureau of Plant Industry in 1902 was a welcome assistance coming to the farmers of the State. This bureau's functions covered a wide range and the propagation of new species of trees and plants, as well as handling protective measures needed for those species already established. The Weather Bureau, which originated in the United States Army Signal Corps in 1870, was commencing to make the weather forecasts which were to prove of almost incalculable value to thousands of California fruit farmers.

#### Fish & Wildlife

In addition to the forest, soil and water conservation problems, California was realizing that more and better protection must be afforded to its wildlife. Action was pressing towards saving the remaining game animals and birds from the fate of the valley elk and other species, now practically extinct as a result of encroachment of human use on their ranges.

During the first fifty years of American rule the existence of native game was taken more or less as a matter of course, with little or no thought of their possible depletion. It was quite customary for several farmers to drive from valley points to the nearest wild land area and after a few days'





shooting bring back a load of deer to supplement their domestic meat diet, just in the same manner in which they might help themselves to a load of timber from the same public lands.

The pioneer freedom of hunting was yet very much in vogue in the early years of the 20th Century and venison could be very easily added to the larder of any resident in sections of the State where deer existed in numbers. Upland birds were still an easy prey for both the rural hunter or the city sportsman vacationing in the hills. The grizzly bear, California's emblematic animal, had been hunted out of existence as the State's leading predator. The millions of shore birds which had darkened the skies in former days were fast being reduced by the giant-bore guns of the market hunters. Like water, fish and game were considered in general the property of the State, and the State was beginning to wake up to the need of looking to the future of its great wildlife resources.

The California Fish and Game Commission had been created by a law passed on April 2, 1870 entitled, "An Act to provide for the restoration and preservation of fish in the waters of the State". It was further provided for in the amended constitution adopted in 1879. Ever since the fishing enterprise of John A. Sutter back in the 1840's had proven probably his most highly-paying venture, California had been interested in fish and fishing, both from the standpoint of sport and as a commercial proposition.

In the propagation of fish as well as in the introduction of new species, the State Fish and Game Commission working in cooperation with the federal agency, had done a wonderful work from the very start. Hardly had it been organized until it began introducing new species of fish into California waters. In 1872, the first Eastern brook trout, German carp and shad were planted. In 1874, catfish and black bass were brought in. Large-mouthed bass were introduced in 1879 and the same year marked the first planting of striped bass in the waters around San Francisco Bay. The success of this striped bass planting can be judged from the fact that by 1911 this species had so multiplied in its new environment that ten million pounds were marketed in San Francisco, besides the large numbers taken by fishermen for sport. By that year the Commission had introduced thirty new varieties of fish to California waters. They planted the first Loch Leven trout in the State in 1894.

The State Fish and Game Commission and the Federal Bureau of Fisheries had also gone into fish propagation in a big way in the matter of establishment of spawn-taking stations and fish hatcheries. The spawn-taking station established on Battle Creek in the Mt. Lassen watershed in 1895 by the State



commission and later taken over by the federal government, became one of the largest in the world. As many as sixty million salmon eggs were collected by this station in a single year. During the season of 1905-06, the Federal Bureau of Fisheries collected over one hundred million salmon eggs from Battle, Baird, and Mill Creeks in the northern section of the State.

The McCloud River Salmon Hatchery was established in 1872 and until its abandonment in 1883 distributed 71,910,000 salmon eggs. The Sisson (now Mt. Shasta) State Fish Hatchery was started in 1884, becoming one of the largest and most complete plants of its kind in the world. Unlimited, cold, clear mountain water, flowing from the slopes of nearby Mt. Shasta, made this an ideal location for the propagation of all species of cold water fish. Besides trout propagation, fifty-eight million salmon eggs were hatched at this plant in the 1903-04 season and ninety-six million the following year.

#### Economic Development and Problems

Taxes and freight rates were two financial problems very much bothering rural California when Theodore Roosevelt came into office. The State, under constitutional revision made in 1894, provided for a State Board of Equalization to act as arbitrators on taxation problems and for a Railroad Commission of three members serving theoretically, at least, as a curb on railroad monopoly. The latter was under the original amendment of 1879. These constitutional amendments were upheld by vote of the people. Neither body had functioned too well. The big landowners were able to dodge their fair share of the taxation burden and political issues in the State were pretty much dominated by the railroad interests.

It was natural, with monopolist-hating Roosevelt in the President's chair at Washington, that some of his so-called "Big Stick" policies would be reflected in the work of the State agencies having the closest official connection with the big combines of the State. These State agencies were beginning to really function about this time. The Railroad Commission was at least making an honest attempt to tell the railroads what they could do, or could not do.

Railroad corporations and combines of corporations represented the greatest aggregation of wealth, urban and rural, within the State's borders and by the first years of the century had reached what might be termed the zenith of their power. In 1880 the total mileage of railroads in the State was 2,195. Ten years later the mileage total was 4,356. In 1901 the Southern Pacific completed its scenic Coast Line between San Francisco and Los Angeles, giving California two internal rail arteries north and south. Another complete transcontinental





rail service was brought by the San Pedro, Los Angeles and Salt Lake Railroad in 1905, this line later being merged with the Union Pacific system.

By the end of 1908 California boasted a total railroad trackage of 7,040 miles. In the two decades between 1880 and 1900, the State's railroad mileage had increased 154.6 percent. Practically all railroad assets were controlled by the two large competing companies, the Southern Pacific and the Santa Fe. Even with this extensive railroad mileage, many rural sections of California, particularly in the immense mountain region, were still dependent upon horse and wagon, and were to wait till later decades for the motor transportation which would annihilate the gap between producer and consumer.

The assessed value of real property in California jumped from \$666,400,000 in 1880 to \$1,101,137,000 in 1890, with a relatively slower growth in the next decade, since by 1900 it had reached the figure of \$1,217,649,000. In 1905 the assessed valuation placed on real estate had risen to \$1,624,023,000. The Encyclopedia Britannica points out, however, that assessed valuation is usually not more than half of the actual value and on this basis makes an estimate of the assets, real and personal, owned by the people of California at that time of \$4,115,491,106, of which \$2,664,472,000 was real property and improvements thereon. The Census Bureau shows California as ranking sixth among the States in the average wealth of its individual inhabitants.

The per capita wealth of the State in 1904 was \$2,582.32, a figure exceeded only by the sparsely settled States of Montana, Wyoming and Nevada, the total combined population of which was approximately 470,000, or about one-third that of California. In 1898, California had the largest savings bank deposits per depositor of any State in the Union, an average of \$637.75. In 1902 the per capita deposit in savings banks, applied to the entire population, was \$110 and one person in every seven in the State was a savings bank depositor.

In spite of the general wealth of its citizens, scores of thousands of itinerant laborers, the sum total of their worldly possession slung over their shoulders, trudged from one farm to another through California's rural regions or holed up in cheap lodging houses in the cities waiting for the next California crop to reach its harvest period. Some of them during periods of slack employment spread their bedding in the "jungle" camps of the true hoboes from whom they were scarcely distinguishable. As a contrast there were many California millionaires and near millionaires in actual existence, or in the making.

The large landowners of the "Gay Nineties" and ensuing periods usually preferred a palatial existence on Nob Hill in San



Francisco and kindred locations, to rural life on the land itself. The hired manager brought the tribute of the land to these Caesars in the form of cash necessary to maintain a luxurious existence. The same economic conditions existed at the turn of the century which had wrung from the pen of Henry George a few years previously the following lines, dealing with California contrasts in wealth and poverty.

"There are liveried carriages on the streets of San Francisco and pleasure yachts on her bay; the class who can live sumptuously on their incomes has steadily grown; there are rich men beside whom the richest of the earlier years would seem little better than paupers--in short, there are on every hand the most striking and conclusive evidences that the production and consumption of wealth have increased with even greater rapidity than the increase of population, and that if any class obtains less it is solely because of the greater inequality of distribution."

The statistics of 1900 indicated that California was crawling up to a marked place in the nation in the matter of non-resident land owners. These figures showed that 22.5 percent of all California farms were operated by cash and share-crop tenants, 72.9 percent by owners and part owners and 4.6 percent by hired managers. As a basis of comparison these figures can be placed against those of the same year for the entire United States which gave 29.5 percent of the country's farms operated by cash and share-crop tenants, 69.3 percent by owners and 1.2 percent by managers. The figures are particularly significant in view of the fact that the Southern cotton growing states, following their almost universal system of share-cropping, are included in the average of these official records.

The companion California land use problem to big land ownership, that of farm laborers, took on a somewhat different complexion during the period under consideration, ushering in a trend towards a system of land use of which California would now like to repent.

### Oriental

The Chinese Exclusion Act of 1882, suspending Chinese immigration to the United States for twenty years and which was made permanent in 1904, did not apply to the Japanese. No great blame can be attached to the legislation dealing with the exclusion of Chinese because such legislation at the period of its enactment was aimed at an altogether different type of Chinese from the present day people of that teeming empire. The queued Chinamen who overran California rural districts and established their own special settlements in the urban





centers were just as different from the Chinese of the 20th Century Chinese Republic as those now fighting for their national liberty under General Chiang-Kai-Shek are from their ancestors who lived in the days of Confucius.

Eking out a bare existence under a peonage system in their own land, living in California under a somewhat similar system was no hardship, and very much more remunerative. Moreover, the Chinese coolies, since the day they had stepped into the labor breach in the building of the Central Pacific, had made good. They had proven themselves good workers in field and mine and were amenable to the laws of the land and peace-loving by habit and disposition.

The California Chinese were not land owners and when they had saved a competence from what to them was fabulous wages they usually returned to their own country to live in comparative comfort and leave their bones in the land of their ancestors. The lack of opportunity allowed them by the hide-bound, ancient traditions of their own land, coupled with the need of cheap labor in California, brought them in hordes to this prosperous western land. Their great numbers and their competition with Caucasian labor, and not any effect their presence had on the political existence of the New World, brought about exclusion legislation.

The same large landowners who held the Indian in semi-slavery and profited by the cheap, efficient labor of the Chinese, thought they had found a new source of cheap land workers with the coming of the Japanese to the shores of California. As has been stated, the gold rush days and boom periods of early settlement brought no immigrants of this nationality to California and not till the late eighties were any numbers found on the Pacific Coast. Even as late as 1886 a census of Japanese in California accounted for only 400 of these people.

Engaged at home in the task of carving up the empire of the peace-loving, almost defenseless Chinese, and flushed with their gradual recognition by civilized nations as a world power, the wily Japanese were not slow to recognize the opportunities existent in California. By 1891 they were coming in at the rate of one thousand a year. In 1900 records show that 12,626 Japanese entered the State. Their national government had promised to limit immigration but had failed to do so, influenced by the fact that their citizens found ready employment on the big farms and were soon able to send back millions of dollars annually to their homeland. From the start, Japanese were mainly engaged in farming and coast fishing.

Not for long did the natural aggressiveness of the Japanese allow them to remain farm laborers and many of them soon





blossomed out as independent farmers, leasing agricultural lands on either a cash or sharecrop basis. Large landowners found it easier and more profitable to rent their holdings to the Japs than to lease to white farmers or operate them under a paid manager.

The Japs were first-class farmers. Their frugal manner of living and their long hours of labor, racial characteristics ingrained through long centuries of such practices in their own land, made them unfair competitors of the rural white population whose background and ideals of living demanded a fuller and easier way of life. The status of the white farm tenant and farm laborer sank to a new low in the face of Japanese encroachment.

Quite apart from immigration exclusion, other restrictions imposed by law on the Chinese residents of California were not applied to the Japanese who were sometimes found in high places in the State's industrial life. The amended State Constitution as adopted on July 4, 1879, set forth that "No Chinese shall be employed on any State, County or municipal or public work except in punishment of a crime". Here was a still earlier case where the legislators had been acting with the under-privileged, pig-tailed Chinamen of that time in mind without any conception of the residents of the more enlightened China-to-be. In 1905 the teeming population of China, their native pride stung into action by the militant, predatory Japanese, were just commencing to emerge from their complacent, peaceful ways of life. At that time youthful Chinese, born in California of California-born parents, were beginning to consider themselves Californians and dress and act the part.

Further removed from six-gun pioneer days, the fight against Japanese encroachment in rural California was not marked with the bloodshed that in previous years had characterized the struggle for Chinese exclusion. The feeling was more intense and bitter, though, and the San Francisco Chronicle, one of the leaders in the struggle for some sort of lawful ban on Japanese aggression in California, in 1905 had this to say:

"The issue involves the entire structure and character of American society...Sufficient has already occurred here to make it plain that if Japanese immigration is unchecked it is only a question of time when our rural population will be Japanese and all rural civilization Japanese, and the white population hard-pressed in our cities and towns.

"The Chinese were faithful laborers and did not buy land. The Japanese are unfaithful laborers and do buy land...They are driving their stakes in our fruit-growing districts where



they intend to stay and possess the land. The people of California are determined that they shall do neither...What work cannot be done without Oriental labor, that much must be unperformed."

### California Lands

In the year 1905 it was still possible for the man with a modest capital to make a start in farming in California with some assurance of success. Not yet by any means had the high peak of land prices been reached in many sections of the State. In the Santa Clara Valley good virgin agricultural land could be purchased for \$250 per acre with ten acres sufficient to support a family in comfort. The railroad interests still had large areas of undeveloped farm lands which were being offered to the public at fair prices. For the small farmer with a capital of \$2,500 to \$5,000 good land was available on the new irrigation projects which were being developed on a sound basis.

The best agricultural lands had passed into private ownership and much sub-marginal land with little or no agricultural value was being taken up under the homestead law. Such lands were sooner or later added to the holdings of large stockmen or consolidated in a single body, exploited by shady real estate operators to be sold by spectacular advertising to gullible Easterners unacquainted with local climatic conditions. During this period hundreds of thousands of acres of these sub-marginal lands were homesteaded by people of small means mainly because the land itself was free.

Some of these entrymen took up their claims on the theory that the government owed them the quarter section of land which they could acquire by sketchy compliance with the law of residence, cultivation and improvement. Others were honest small farmers who, had they invested the same amount of time and money on a small tract of proven agricultural, irrigated land in the older developed sections of the State, might have become successful freeholders instead of losing the savings of a lifetime in trying to wrest a livelihood from land never intended by Nature to produce cultivated crops. Land salesmen and land locators flourished and nowhere, perhaps, did the law of caveat emptor apply more aptly than to California lands.

That the framers of the Constitution of the State of California had in mind not a commonwealth of large land owners and impoverished tenants and farm laborers but an independent middle class of freeholders living upon and using their lands, is proven by the following extracts from this master law of the State as adopted July 4, 1879:





Article VIII, Sec. 2 ....Cultivated and uncultivated land, of the same quality, and similarly situated, shall be assessed at the same value.

Article XVII, Sec. 2 ....The holdings of large tracts of lands, uncultivated and unimproved, by individuals and corporations, is against the public interest, and should be discouraged by all means not inconsistent with the rights of private property.

Article XVII, Sec. 3 ....Lands belonging to this State, which are suitable for cultivation, shall be granted only to actual settlers and in quantities not exceeding three hundred and twenty acres to each settler, under such conditions as prescribed by law.

The Utopian existence promised by the wonderful climate of California, combined with her soil and water, had not materialized for thousands of her rural residents, as large land-using operations pushed the little man aside and the encroachment of aliens of a different race and color was lowering the living standards of many people whose forbears had made themselves masters of the American continent.

California in slightly over half a century had been the scene of a land of cattle barons holding sway over immense acreages of undeveloped lands; of the greatest gold rush in world history; of wheat fields of a scope to cause the world to wonder; for a mere song had disposed of forests unexcelled any place on earth, and now was well established as one of the most diversified fruit-producing areas in the world. California had discovered her immense reservoir of oil. It had wakened to a consciousness of the value of her forest resources, and had taken her leading place in the realm of irrigated farm lands. While brakes had been applied somewhat to lavish land exploitation, California for decades must yet suffer from her heritage of extravagant land use practices.

-----





